

WHAT IS CLAIMED IS:

1. A dynamic controller for a light emitting active-matrix display, the display being responsive to code values for producing a light output, comprising:

- a) a photosensor located on the display for sensing the light output from the display and generating a feedback signal representative thereof;
- b) a feedback signal converter for converting the feedback signal to a converted feedback signal having the same form as the code value;
- c) a code-value corrector including a memory responsive to a code value for producing a corrected code value; and
- d) an update calculator responsive to the converted feedback signal, the code value and the corrected code value to update the memory to minimize the difference between the converted feedback signal and the code value.

2. The controller claimed in claim 1, further comprising an intermediate memory for receiving and storing corrected data signals from the data signal corrector and supplying the corrected data signals to the display.

3. The controller claimed in claim 1, further comprising an intermediate memory for receiving and storing converted feedback signals from the feedback signal converter and supplying the converted feedback signals to the correction signal calculator.

4. The controller claimed in claim 1, wherein the feedback signal is an analog current signal and the converted feedback signal is a digital code value.

5. The controller claimed in claim 1, wherein the code values are supplied to the display device as analog signals, and further comprising a digital to analog converter for converting the digital signals to analog signals prior to applying the code value signals to the display device.

6. The controller claimed in claim 1, wherein the code values are supplied to the display as digital signals.

7. The controller claimed in claim 1, wherein the active-matrix display includes display pixels and a photosensor for each display pixel.

8. The controller claimed in claim 1, wherein the active-matrix display includes representative pixels and a photosensor for each representative pixel.

9. The controller claimed in claim 8, further comprising means for sending every code value to the representative pixel and producing a corrected code value for every code value.

10. The controller claimed in claim 1, wherein the display and the dynamic controller are partitioned into multiple units.

11. The controller claimed in claim 1, wherein the display device is a color display device and the dynamic controller includes a representative pixel and a photosensor for each color.

12. The controller claimed in claim 11, including a separate feedback signal converter, code-value corrector, and update calculator for each color.

13. The controller claimed in claim 1, wherein the display is a color display and the code-value corrector includes means for performing color transformations on the code values.

14. The controller claimed in claim 1, further comprising means for compensating the converted feedback signal for a global display attribute.

15. The controller claimed in claim 14, wherein the global display attribute is ambient illumination.

16. The controller claimed in claim 1, wherein the feedback signal converter includes circuitry to compensate for pixel-specific display attributes.

17. The controller claimed in claim 1, wherein the feedback signal converter includes circuitry to compensate for position-specific display attributes.

18. The controller claimed in claim 1, including means for updating the memory upon start-up.

19. The controller claimed in claim 1, wherein the controller and the display device are integrated on a common substrate.

100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
195
196
197
198
199
200